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CLAIMS

1. A power supply including:
a supply rail that provides a supply current of up to a predetermined current limit to a load that draws a load current; and
5 a supercapacitive device connected in parallel with the supply rail or the load for allowing the load current to temporarily exceed the predetermined current limit while maintaining the supply current at less than the predetermined current limit.
2. A supply according to claim 1 wherein the supercapacitive device has an effective capacitance of at least 10% for a 0.03 msec pulse.
- 10 3. A supply according to claim 1 wherein the supercapacitive device has an effective capacitance of at least 35% for a 1 msec pulse.
4. A supply according to claim 1 wherein the supercapacitive device has an effective capacitance of at least 55% for a 10 msec pulse.
5. A power supply for a load, the power supply including:
15 a voltage rail for providing a voltage to the load;
a supercapacitive device having a predetermined footprint and a predetermined ESR for connecting to the rail in parallel with the load, wherein the quotient of the predetermined footprint and the predetermined ESR is greater than about $4 \text{ mm}^2/\text{m}\Omega$.
6. A supply according to claim 5 wherein the quotient is greater than about 5
20 $\text{mm}^2/\text{m}\Omega$.
7. A supply according to claim 5 wherein the quotient is greater than about 10 $\text{mm}^2/\text{m}\Omega$.
8. A supply according to claim 1 wherein the quotient is greater than about 66 $\text{mm}^2/\text{m}\Omega$.
- 25 9. A power supply for a load, the power supply including:
a voltage rail for providing a voltage to the load;
a supercapacitive device having a predetermined volume and a predetermined ESR for connecting to the rail in parallel with the load, wherein the quotient of the predetermined volume and the predetermined ESR is greater than about $6 \text{ mm}^3/\text{m}\Omega$.
- 30 10. A supply according to claim 9 wherein the quotient is greater than about 20 $\text{mm}^3/\text{m}\Omega$.
11. A supply according to claim 10 wherein the quotient is greater than about 100 $\text{mm}^3/\text{m}\Omega$.

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12. A supply according to claim 9 wherein the supercapacitor has a height that is less than 2.3 mm.
13. A supply according to claim 9 wherein the voltage rail is supplied by a battery source.
- 5 14. A supply according to claim 9 wherein the voltage rail is supplied by a regulated power supply.